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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,050	12/28/2001	Richard E. Smalley	11321-P012USD5	8600

7590 07/14/2004

Hugh R. Kress  
Winstead Sechrest & Minick, P. C.  
2400 Bank One Center  
910 Travis Street  
Houston, TX 77002

EXAMINER

HENDRICKSON, STUART L

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/033,050

Applicant(s)

SMALLEY ET AL.

Examiner

Stuart Hendrickson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 81-90, 104, 105, 111 and 112 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 81-87, 104, 105, 111 and 112 is/are rejected.
- 7) ☒ Claim(s) 88-90 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 81-87 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tohji et al. Nature.

The reference teaches SWNTs of the claimed length. This does not discuss the number of nanotubes, however they are made in bulk so it appears that the claimed number are made. In any event, the amount of a material does not impart patentability; In re Rose 105 USPQ 137.

Claims 81-87 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ajayan et al. Science.

The reference teaches SWNTs of the claimed length. This does not discuss the number of nanotubes, however they are made in bulk so it appears that the claimed number are made. In any event, the amount of a material does not impart patentability; In re Rose 105 USPQ 137.

Claims 104, 105, 111, 112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ajayan et al. taken with applicant's admissions.

The reference does not teach the claimed uses, however these are obvious as means to exploit the well-established emitter and electronic properties of carbon nanotubes. The applicant admits in the specification that the non-nanotube structures recited in the claims are old and known.

Applicant's arguments filed 6/24/04 have been fully considered but they are not persuasive.

The rejections are not 102 and 103, they are 102/103 where the material appears to be the same even though the teachings are not identical to the claims. If the term 'macroscopic' implies a number larger than  $10E6$ , then the claims should reflect this. Otherwise, the term is merely an adjective. The figure of Tohji is not clear enough to distinguish; a clear copy (lightened contrast?) is requested. Perhaps upon review the rejection of claim 87 (only) will be withdrawn.

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One can scale up the process of Tohji to make a million tubes (if not already inherently made), or simply combine several batches. Thus, no patentability is seen in the number of them. It is not clear why SWNTs are a 'new product'. Ajayan teaches swnts on pg. 1214 middle, so they are at least suggested. The gist of Ajayan is that the tubes *become* aligned, therefore it is deemed that the claimed limitations are met. A matrix is not excluded, and indeed can be the substrate. Claims 104, 111 do not recite additional structure. Specification pg. 33 should be resubmitted. The Hirsch reference should be submitted.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (571) 272-1351.



Stuart Hendrickson  
examiner Art Unit 1754